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moted to the head of the department of geology. At the same meeting Mr. Irving Perrine, instructor in geology at Cornell University, was appointed associate professor of geology.

DR. PERCY E. RAYMOND, formerly of the Carnegie Museum, Pittsburgh, and more recently paleontologist to the Geological Survey of Canada, has been appointed assistant professor of paleontology at Harvard University, and curator of invertebrate paleontology in the Museum of Comparative Zoology.

DISCUSSION AND CORRESPONDENCE

NUMBER OF STUDENTS PER TEACHER

TO THE EDITOR OF SCIENCE: In the January 26 number of SCIENCE is a note on the "Number of Students per Teacher," by Professor A. S. Hathaway, in which he says:

It appears to me that the only correct way to determine the average number of students handled per teacher in any school is to divide the number of student hours per week by the number of teacher hours per week.

This formula might simplify the mere mathematics of the situation, but it would most certainly fail to give just the information desired—the strength of the teaching force in an institution, or, in the words of Professor Hathaway, "the average number of students handled per teacher." It is then far from being a correct way, to say nothing of the only correct way.

The following illustration will show how the method suggested would miss the very purpose of our calculations. Suppose that a college of 300 students, averaging 15 hours recitation per week each, has 5 instructors, each teaching 20 hours per week; then the result would be, according to the formula suggested,

$$300 \times 15 \div 5 \times 20 = 45 \text{ "students handled per teacher."}$$

Now, another college with the same number of students, each reciting also on the average 15 hours per week, but with 10 teachers, each meeting classes 10 hours per week, would

show the same result; or a college of 225 students, averaging 20 recitations per week, with 10 teachers, each having 10 classes per week, would show 45 "students handled per teacher." Certainly the teaching forces of these schools would not be equally strong.

It is not particularly the average number of students per class, or recitation, that we are after. Even if this were our object we should find the matter more complicated than Professor Hathaway has supposed. Some "courses" require a proportionately larger number of recitations per hour's credit than others. And how should we treat laboratory work, which can not with fairness be classed with recitations? Some laboratory courses require very little outside work, but more work in the laboratory, while others require a considerable amount. What complicates the matter still more, is the fact that in many cases student assistants direct such courses in large part while in others professors attend to the work themselves. These are only a few of the complications one actually finds.

The class work does not afford the only opportunity for the teacher to assist and stimulate the student; and any scheme based upon class work alone would not only do an injustice to some of the very best of our educational institutions, but would also tend to emphasize unduly a practise that is doubtless already carried too far.

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ARE TEACHERS ENTITLED TO COMPLIMENTARY DESK COPIES OF TECHNICAL BOOKS?

HERE is the teacher's point of view:

The texts which I am using are of no personal benefit to me. I am supposed to use the latest edition, and to change the text once in a while. I do not see how I can well afford to buy them. The publishers get big profits out of the students and can well afford to give a copy to the teacher, while, on the other hand, the teachers' salaries are meager. And as to new reference books and practical engineering books, I can not always order them

for the college library without first seeing the book. So the only way left me is to ask publishers for a desk copy, however humiliating this may be.

Here is the publishers' point of view:

We consider it a good business policy to send a desk copy to the professor in charge of a course where a considerable number of our books are used. We also send copies of new books to professors prominent in their respective fields, hoping for returns on account of their recommendation. But the privilege of free books is greatly abused by some teachers, who finally succeed in accumulating fair-sized libraries of free books. Again, frequently we get requests for desk copies not only from the professor in charge, but also from all the instructors who assist him in his classes. Moreover, these requests come from the same schools year after year, showing that the instructors are allowed to appropriate the books. This we consider an unnecessary and unjust burden upon the retail price of technical books. At the same time we hesitate to refuse such requests, for obvious reasons. One of the worst features of the situation is that requests for desk copies come from colleges from which only two or three copies are ordered later on.

Here is the writer's point of view:

The question raised is one of equity and justice to both the teachers and the publishers. Moreover, the dignity of colleges of engineering is to be considered. Since this is a matter of ethics, equally applicable to practically all engineering colleges, it ought to be decided by the Society for the Promotion of Engineering Education. Other national engineering societies have committees on professional ethics, and this is evidently a problem for such a committee. A resolution approved by the society will have a great moral effect with both teachers and publishers, and would be an important step towards the solution of this vexed problem.

I feel rather strongly that all requests for free copies of books should be pronounced unprofessional and undignified. If a teacher does not care or can not afford to buy a book,

the college ought to buy a copy and place it at his disposal as long as he needs it in his teaching, the book remaining the college property. The college provides the teacher with an office and its furniture, heat, light, stationery, lantern slides, lecture apparatus, etc. To provide text-books when requested would be but a small additional expense, but it would mean a great deal for the teachers, and would put the whole matter upon a dignified business-like basis. As it is now, the situation reminds one of the railroad passes, now fortunately prohibited by law.

As to new engineering books, it is to the advantage of colleges, publishers and teachers that an opportunity should be given to those engaged in teaching to see and to inspect all noteworthy new books relating to their respective subjects. This end can be attained easily without sending out complimentary copies. The publishers of engineering books could arrange to move a few copies of new books along definite "circuits," each comprising several colleges. In each college it would be the duty of the dean or of the head of the respective department to bring the new book to the attention of the faculty and to consider the advisability of ordering a copy for the college library. There is nothing compulsory in this scheme; it would be a privilege offered by the publishers, and if certain teachers should not care to avail themselves of this advantage that would be their own business.

As stated before, in my opinion it would be to the best advantage of all concerned if a distribution of complimentary books were done away with altogether, except perhaps as voluntary and unsolicited gifts from authors and publishers to their friends. However, with the above scheme of "circuit books" even these gifts would become less and less necessary, because in most cases a person merely wishes to know that a certain book has been issued and also likes to know its scope and plan. After that, it mostly becomes a dead weight in his library.

Should the suggestions made above be deemed too radical in view of the established custom and the conditions of the trade, I

would suggest for the consideration of the Society for the Promotion of Engineering Education the following partial improvement in the method of requests for desk copies:

1. All requests for desk copies to be sent to the publishers only by the deans of colleges, and not directly by individual teachers or heads of departments. This would insure more justice, uniformity and dignity.

2. All free copies to remain the permanent property of the college, and not of individual teachers. This will reduce the number of requests to a reasonable amount.

3. Whenever possible, teachers and colleges ought to purchase books and avoid asking for complimentary copies.

V. KARAPETOFF

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SCIENTIFIC BOOKS

Melanesians and Polynesians; Their Life Histories Described and Compared. By GEORGE BROWN, D.D. London, MacMillan & Co. 1910. Pp. 451, 70 illustrations. Price, \$3.00.

The work is a comparative study of two groups of mankind generally supposed to have next to nothing in common. The relationship of these groups, however, has been maintained by some students since the epoch-making explorations of Wallace, who considered the Pacific peoples as variants of one race. Mr. Brown's theory, based principally on the languages concerned, in which he is an authority, is that a Negrito substratum formerly occupied the East Indies as far west as Borneo, also the continental skirts, and this stock became diluted by infusion of blood from India. Later the pressure of Malay tribes drove them out into the Pacific, the Polynesians having the greatest admixture of a light brown stock drifting to some point of radiation, perhaps Manua of the Samoan group, and the Melanesians, retaining more of the blood of the original black inhabitants, dispersed to the islands where they live at present. The Melanesians are thus regarded as the older, less commingled stock.

His long residence in New Britain and

Samoa and his command of the native languages fit Mr. Brown especially for the work and his opinions are entitled to great respect. The intention to establish by comparison the cultural affiliation of the dusky and fair-brown peoples has produced a most interesting and valuable body of observations charmingly presented in clear English, not only a contribution to science in the way of an almost unique comparative study, but a non-controversial book well worth reading for general information.

WALTER HOUGH

Herpetology of Missouri. By JULIUS HURTER, SR., Curator, Academy of Science of St. Louis, Mo. Pp. 215; 12 pl. relating to structural characteristics.

There have been various *resumés* of the fauna of states, these publications of more or less economic value, but it is genuinely pleasing to note the appearance of the present work in which it is evident throughout that the author has devoted much labor and time in presenting a detailed and practical review. A publication like this stands as a fine example of what should be forthcoming from other workers on local fauna. Carefully systematized it also treats those economic features which greatly enlarge the field of usefulness. Too many of our local scientific workers devote a great amount of time and space to the treatment of synonyms, forgetting that this phase of their subject is of absolutely no interest to the great mass of readers, eagerly awaiting the zoological history of their home territory.

The farmer, the natural science teacher and the younger student will find Mr. Hurter's work of immediate and practical interest, while the technical descriptions are sufficiently elaborate to properly identify any of the species. There is a series of well-prepared plates relating to the mouth characters of salamanders and frogs, the foot characters of the latter, the scalation of serpents and like characters.

Looking through the systematic arrangement, one notes several apparently recent